

**HYDROCHLORIC ACID 33%**

REVISION DATE: 9/19/2022

1. - PRODUCT AND COMPANY IDENTIFICATION**Product name:** HYDROCHLORIC ACID 33%.**Internal Code of product identification:** 102.01.0.**Company name:** USIQUÍMICA DO BRASIL LTDA.**Address:** Rua da Lagoa, 431 - Cumbica - Guarulhos - SP.**Company Phone:** + 5511 3821-7000 (PBX system) - + 5511 2481-3355.**Emergency phone:** SUATRANS - COTEC - Environmental Emergency.

DDG (0800) 0111-767 - (0800) 7071-767 - 24 HOURS.

193 – Firefighters.

Main recommended uses for the substance: Metal pickling, surface cleaning, chloride manufacturing, effluent treatment, cationic resin acidification, alkali neutralizer, among others.**2. - HAZARD IDENTIFICATION****Classification of the mixture or substance**

Corrosive to metals, category 1,

Acute toxicity - Oral, category 4,

Acute toxicity - Dermal, category 4,

Skin corrosion/irritation, category 1B,

Serious eye damage/eye irritation, category 1 Respiratory


sensitization, category 1 and subcategories 1A and 1B, Skin

sensitization, category 1 and subcategories 1A and 1B,

Aspiration hazard, category 2,

Hazardous to the aquatic environment - Acute, category 1,

GHS label elements, including precautionary phrases:

LABEL ELEMENTS	DATA
Product identification and supplier emergency telephone number	Commercial Name: Hydrochloric acid 33% Synonym: Muriatic acid, hydrochloric acid. Emergency phone: SUATRANS - COTEC - Environmental Emergency. DDG (0800) 0111-767 - (0800) 7071-767 - 24 HOURS.
Chemical composition.	HCl, minimum , 32 % (w/w) Water, maximum, 68 % (w/w).
Hazard pictograms.	
Warning words.	DANGER
Danger phrases.	- H290: May be corrosive to metals. - H302: Harmful if swallowed. - H305: May be harmful if swallowed and enters airways. - H312: Harmful in contact with skin. - H314: Causes severe skin burns and eye damage. - H317: May cause allergic skin reactions. - H318: Causes serious eye damage. - H334: When inhaled, it may cause allergic or asthma symptoms or breathing difficulties. - H400: Very toxic to aquatic organisms.

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Precautionary phrases. (Prevention)	<ul style="list-style-type: none">- P234: Keep only in the original container.- P261: Avoid breathing vapors and mists.- P264: Wash thoroughly after handling.- P270: Do not eat, drink or smoke when using this product.- P272: Contaminated work clothing must not be allowed to leave the workplace.- P273: Avoid release to the environment.- P280: Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary phrases. (Emergency Responses)	<ul style="list-style-type: none">- P301 + P312 IN CASE OF INGESTION: If you feel unwell, contact a TOXICOLOGICAL INFORMATION CENTER/or a doctor.- P301+P310 IN CASE OF INGESTION: Contact a TOXICOLOGICAL INFORMATION CENTER or physician immediately.- P302+P352 IN CASE OF SKIN CONTACT: Apply wet compresses.- P303 + P361 + P353 IN CASE OF CONTACT WITH SKIN (or hair): Remove immediately all contaminated clothing. Rinse the skin with water or take a shower.- P304 + P340 IN CASE OF INHALATION: Remove the person to a ventilated area and keep the person in a rest position that does not make it difficult to breathe.- P305 + P351 + P338 - IN CASE OF EYE CONTACT: Rinse thoroughly with water for several minutes. If contact lenses are used, remove them if it is easy. Continue rinsing.- P311 Contact a TOXICOLOGY INFORMATION CENTER or physician.- P312 If you feel unwell, contact a TOXICOLOGICAL INFORMATION CENTER or a doctor.- P321 Provide specific treatment.- P332+P313 If skin irritation occurs: Consult a physician.- P333+P313 If skin irritation or rash occurs, seek medical advice.- P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or physician.- P362+P364 Take off all contaminated clothing and wash it before reuse.- P390 Absorb spilled product to avoid material damage.- P405 Store locked up.- P406 Store in a corrosion resistant container with a strong inner liner.- P501 Dispose of contents or container in accordance with local regulations.

Other hazards which do not result in classification:

Violent reaction with risk of explosion in contact with concentrated alkalis and alkaline and alkaline earth metals.

3. - COMPOSITION AND INFORMATION ON THE INGREDIENTS

Substance: HCl (hydrogen chloride) in aqueous solution.

Chemical or common name: Hydrochloric acid 33%.

Synonym: Muriatic acid, hydrochloric acid.

Composition: Water, maximum 68% (weight/weight). Water, maximum 68% (weight/weight).

Chemical Abstract Service (CAS No): 7647-01-0.

Impurities that contribute to the danger: Not applicable.

4. - FIRST AID MEASURES**First aid measures**

- **Inhalation:** Remove the victim to fresh air and keep at rest in a position comfortable for breathing. Contact a TOXICOLOGICAL INFORMATION CENTER or physician. Take this MSDS.

- **Skin contact:** IN CASE OF SKIN CONTACT (or the hair): Immediately remove all clothing

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contaminated. Wash the skin with water/take a shower. Contact a TOXICOLOGICAL INFORMATION CENTER or physician. Take this MSDS.

- **Eye contact:** Rinse thoroughly with water for several minutes. If contact lenses are used, remove them if it is easy. Continue rinsing. Contact a TOXICOLOGICAL INFORMATION CENTER or physician immediately. Take this MSDS.

- **Ingestion:** Corrosive product. If ingested, do not induce vomiting. Dilute immediately, providing the victim with large amounts of water. If vomiting occurs spontaneously, provide additional water and keep the victim in an airy place. Contact a TOXICOLOGICAL INFORMATION CENTER or physician immediately. Take this MSDS.

Most important symptoms and effects, acute or late:

Harmful in contact with the skin and if ingested can cause burns in the mouth, pharynx and abdomen with incidence of vomiting and dark diarrhea. It causes severe brown to yellowish skin burns, severe constant pain and difficult healing. Causes serious ocular damage with pain, tearing, edema of the conjunctiva and damage to the cornea. When inhaled, it can cause shortness of breath and tiredness. It can cause itching and dermatitis. Product steam can cause corrosion of teeth and necrosis. Aspiration of the product penetrates the airways and can cause chronic bronchitis, in addition to suffering attacks of bronchopneumonia with coughing, suffocation, headache and dizziness.

Notes to the physician:

Avoid contact with the product to help the victim. If necessary, symptomatic treatment should include, above all, supportive measures such as correction of hydro electrolytic, metabolic disorders, as well as respiratory assistance. In case of contact with the skin and/or eyes, do not rub the affected parts. To relieve pain and if necessary administer "*morphine sulfate - 5 mg*" every 4 hours, avoiding depression of the central nervous system.

5. - FIREFIGHTING MEASURES

Suitable extinguishing measures: For small proportions: Compatible with fire extinguishers.

For large proportions: Compatible with water in the form of mist or foam.

Not recommended: Direct water jets.

Specific hazards of the mixture or substance: Combustion of the chemical or its packaging can form irritating, toxic and corrosive gases. Produces toxic and irritating vapors when heated (hydrogen chloride gas).

Firefighting team protection measures: Self-contained breathing apparatus (SCBA) with positive pressure and full protective clothing. Containers and tanks involved in the fire must be cooled with water mist.

6. - CONTROL MEASURES FOR SPILLING OR LEAKING

Personal precautions for the staff that is not part of the emergency services:

For staff that is not part of the emergency services: Isolate leak and ignition sources preventively. Do not smoke. Do not touch damaged containers or spilled material unless wearing appropriate clothing. Use personal protective equipment as described in section 8.

For staff of the emergency department: Wear complete PPE, splash goggles, suitable protective gloves, PVC or rubber apron, acid-resistant protective clothing (PVC or other equivalent material), rubber or PVC boots and under normal conditions, there is no need, but in special situations, use a mask (half face mask) with a filter against vapors or mists, a full face mask with an air line, or even an autonomous set of breathable air.

Precautions to the environment: Prevent the spilled product from reaching water courses and sewers.

Methods and materials for containment and cleaning: Neutralize spilled product with dilute acid or dilute with plenty of water. Absorb the product with earth, dry sand or other non-combustible material to avoid material damage. Place adsorbed material in appropriate containers and remove to a safe place. Dispose of the adsorbent material used in the spill in a suitable landfill. For final disposal, proceed according to section 13 of this MSDS.

Disposal: Waste must be disposed of in accordance with current Environmental Legislation. Keep chemicals in their original containers. Do not mix with other waste. Handling dirty containers must be carried out in the same way as the product itself. An WSDS of the generated waste must be generated.

Differences in the action of large and small leaks: There is no distinction between the actions of large and small leaks for this product.

7. - HANDLING AND STORAGE

Handling:

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Technical measures Handle in a ventilated area or with a general ventilation/local exhaust system. Avoid formation of vapors or mists. Avoid inhaling the product if vapors or mists are formed. Avoid contact with incompatible materials. Wear protective gloves, protective clothing, eye protection and/or face protection as indicated in Section 8. **Prevention of worker's exposure:** Avoiding the formation of vapors/aerosols. Working with exhaust / chimney. Do not inhale the substance/mixture. Using specific PPE's - splash goggles, face shield, PVC gloves and protective clothing. Avoid inhaling vapors.

Wash after handling and decontaminate PPE's after use. PPE's must be approved for use only with the respective CAs – Certificates of Approval.

Wash hands and face thoroughly after handling and before eating, drinking, smoking or using the bathroom. Contaminated clothing must be exchange and washed before use. Remove contaminated clothing and protective equipment before entering eating areas.

Precautions and guidelines for safe handling: Use personal protective equipment (PPE) to avoid direct contact with the product. Handling the product in a well-ventilated place. Forms a slippery layer with water.

Storage:

Appropriate: Store in a well-ventilated place away from sunlight. Keep the container closed. It is not necessary to add stabilizers and antioxidants to ensure product durability. May react dangerously with some incompatible materials as outlined in Section 10.

To avoid: Avoid extreme heat.

Hygiene measures:

Appropriate: Always sanitize your hands before handling any food, as there is a risk of food contamination. Contaminated clothing must be washed and sanitized before use. Always keep gloves free from moisture and decontaminated.

Inappropriate: Direct contact with the product and/or its residues.

Technical measures

Suitable conditions: Keep containers closed and in a well-ventilated place. Keep containers away from heat and direct sunlight. Avoid extreme temperatures.

packaging materials

Recommendations: Ebonite, fiberglass resin (FRP) and high density polyethylene (HDPE) and glass.

Not recommended: Metals (magnesium, iron, aluminum and zinc), alkaline earth metal oxides, alkali metal hydroxides (concentrated or solid), hypochlorite's, chlorates, chlorides, chlorinated isocyanates, sulfites and formaldehydes, among others.

8. - EXPOSURE CONTROLS AND PERSONAL PROTECTION**Control parameters:****Occupational exposure limit:**

Hydrochloric Acid: TLV-C (ACGIH, 2012): 2 ppm

LT (NR-15, 1978): 4 ppm - 5.5 mg/m³

Biological indicators

Not established.

Measures of engineering control:

Provide mechanical ventilation and direct exhaust system to the outside environment. These measures help to reduce exposure to the product. It is recommended to make emergency showers and eye washes available in the work area. Keep concentrations of the substance or mixture in air below stated occupational exposure limits.

Personal protection measures:**Protection for the eyes/face:**

Splash goggles, and in certain activities, face shield.

Protection of the skin and body:

PVC or rubber gloves, PVC or rubber apron, acid-resistant protective clothing (PVC or equivalent material) and rubber or PVC boots.

Respiratory protection:

Mask (full face or half face) with acid gas filter, full face mask with air line or self-contained breathing air assembly.

Thermal hazards:

Use personal protection when handling the heated substance and follow work and break procedures in

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hot environments.

9. - PHYSICAL AND CHEMICAL PROPERTIES**Aspect (physical state, shape and color):** Liquid, colorless to slightly yellow**Odor and odor limit:** Pungent, penetrating and irritating**pH:** 2 (0.2% HCl solution by weight)**Melting Point / Freezing Point:** 15.3°C (45% HCl solution by weight)**Initial boiling point and boiling temperature range:** 110.0°C***Flash point:** Not available**Evaporation Rate:** Not available**Flammability (solid, gas):** Not applicable**Density:** minimum 1.1628 g/cm³ (at 15.5° C), equivalent to the acidity of 32% m/m**HCl Lower and Upper Flammability or Explosive Limits:** Not available**Vapor pressure:** 11 mmHg to 20°C ***Vapor Density:** Not available Relative density: Not available**Solubility(ies):** Soluble in water.**Partition coefficient-n-octanol/water:** log kow: 2.11 - 2.8**Autoignition Temperature:** Not Available**Decomposition temperature:** Not available**Viscosity:** Not available**Further information:** Critical temperature of 51.0°C

* Information referring to the 30% HCl solution by weight

10. - STABILITY AND REACTIVITY**Specific conditions:****Stability and reactivity:** Stable under normal temperature and pressure conditions.**Possibility of hazardous reactions:** Water added directly to the product can generate dangerous reactions with the emission of gases. Violent reaction with risk of explosion in contact with concentrated alkalis and alkaline and alkaline earth metals.**Conditions to avoid:** Elevated temperatures and incompatible materials.**Incompatible materials:** Strong alkalis, alkali metals and alkaline earths.**Hazardous decomposition products:** Toxic and irritating vapors such as hydrogen gas, chlorine gas, hypochlorite's, nitric acid, manganese dioxide, permanganates, chlorites, chlorates and golden isocyanates.**11. - TOXICOLOGICAL INFORMATION****Acute toxicity:**

Harmful if swallowed and in contact with skin.

LD50 (oral, rabbits): 900 mg/kg

LD50 (dermal, mice): 1449 mg/kg

LC50 (inhalation, mice, 4h): 554 ppm*

* Information referring to hydrochloric acid in gaseous state.

Skin corrosion/irritation: It causes severe burns to the skin with a brown to yellowish color, strong constant pain and difficult healing.**Severe ocular lesions/eye irritation:** Causes serious ocular damage with pain, tearing, edema of the conjunctiva and damage to the cornea.**Respiratory or skin sensitization:** When inhaled, it can cause allergic or asthma symptoms or breathing difficulties with shortness of breath and tiredness. May cause allergic skin reactions with itching and dermatitis.**Germ cell mutagenicity:** The product is not expected to show germ cell mutagenicity.**Carcinogenicity:** The product is not expected to be carcinogenic.**Reproductive toxicity:** The product is not expected to present reproductive toxicity.**Specific target organ toxicity- single exposure:** If ingested, it causes burns in the mouth, pharynx and abdomen.

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with incidence of vomiting and dark diarrhea.

Specific target organ toxicity - repeated exposure: The steam from the product can cause corrosion of the teeth and necrosis.

Aspiration hazard: It can be harmful if ingested, and penetrate the airways and can cause chronic bronchitis, in addition to suffering attacks of bronchopneumonia with cough, suffocation, headache and dizziness.

12. - ECOLOGICAL INFORMATION**Environmental effects, behaviors and impacts of the product**

Ecotoxicity: Harmful to aquatic organisms.

LC50 (*Lepomis macrochirus*, 96h): 31 - 55 mg/L.

Persistence and degradability: Due to the lack of data, it is expected that the product will show persistence and not be quickly degraded.

Bioaccumulative potential: Bioaccumulative potential in aquatic organisms is not expected.

Mobility in soil: Not determined.

Other adverse effects: The acid is harmful to aquatic life by lowering the pH. Most aquatic species cannot tolerate a pH of 5.5 regardless of weather. This reduction in pH can also cause the release of salts of metals, such as aluminum, which may also contribute to the exposed toxicity. Leaks and/or spills must be reported to the competent authorities.

13. - CONSIDERATIONS ON FINAL DISPOSAL**Recommended methods for final disposal:**

The treatment and disposal of product residues must be done in a suitable environment, by people trained in the use of special equipment and the recommended PPE's to avoid contact with the product, its vapors or mists. Leaks must be contained and collected for later disposal after neutralization.

Product:

Ensure all Federal, State and local agencies receive proper notice of spills and disposal methods. CONAMA Resolution 005/1993, Law No. 12,305, as of August 2, 2010 (National Solid Waste Policy).

Product waste:

Consult environmental regulatory agencies for advice on acceptable regulatory practices. Come in contact with relevant local authorities. It can be incinerated when in compliance with local regulations. Or dispose of in an approved chemical waste landfill.

Used Package:

Empty containers must be drained and covered before handling and transport operations. If the package is not properly washed and decontaminated, it is considered to contain the product.

14. - TRANSPORT INFORMATION**National and International Regulations****Land:**

Resolution No. 5947/2021 of the Brazilian National Land Transport Agency (ANTT), Approves the Complementary Instructions to the Regulation of Land Transport of Dangerous Goods and its amendments.

UN number: 1789

Appropriate name for shipment: HYDROCHLORIC ACID

Risk class: 8

Risk subclass: -

Risk number: 80

Packing group: II

Waterway:

DPC – Directorate of Ports and Coasts (Transport in Brazilian waters) Maritime Authority Regulations (NORMAM) NORMAM 01/DPC: Vessels Used in Open-seas Navigation

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Risk subclass: -

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Risk number: 80 -**Packing group:** II**EmS:** F-A, S-B**- Air Transport:**

ANAC - National Civil Aviation Agency - Resolution No. 129 as of January 8, 2009

RBAC N°175 - (BRAZILIAN CIVIL AVIATION REGULATION) - TRANSPORTATION OF DANGEROUS ITEMS IN CIVIL AIRCRAFT

IS No. 175-001 - SUPPLEMENTARY INSTRUCTION - IS

ICAO - "International Civil Aviation Organization" - Doc 9284-NA/905

IATA - "International Air Transport Association"

Dangerous Goods Regulation (DGR)

UN number: 1789**Appropriate name for shipment:** HYDROCHLORIC ACID**Risk class:** 8**Risk subclass:** -**Risk number:** 80**Packing group:** II**Environmental hazard:**

The product is not considered a marine pollutant. The extreme pH of the product can cause changes in environmental compartments causing damage to organisms.

15. - REGULATORY INFORMATION

Specific regulations for the chemical product:

Federal Decree No. 2,657, as of July 3, 1998;

Standard ABNT-NBR 14725:2014;

Ordinance No. 229, as of May 24, 2011 – Changes Regulatory Standard No. 26.

16. - OTHER INFORMATION

The information on this sheet corresponds to the current state of our knowledge and experience of the product and is not exhaustive. It applies to the product under the conditions specified, unless otherwise stated. In case of combinations or mixtures, make sure that no new danger can appear. This information does not, in any case, exempt the user of the product from complying with all legislative, regulatory and administrative texts relating to the product, safety, hygiene and protection of human and environmental health.

Bibliographical References:

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